

# SPECweb99 Result

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IBM: eServer xSeries 345  
Microsoft: IIS 5.0 and SWC 3.0

SPECweb99 = 5000

Test Date: Jul-2002  
Tester: IBM

Hardware Avail: Oct-2002 OS Avail: Feb-2000 HTTP Software Avail: Feb-2000 Sup. Software Avail: -- SPEC license #: 11

## Hardware

Vendor: IBM  
Model: eServer xSeries 345  
Processor: 2.4 GHz Intel Xeon Processor  
# Processors: 2 cores, 2 chips, 1 core/chip (Hyper-Threading enabled)  
Primary Cache: 12KBI+8KBD on chip  
Secondary Cache: 512KB  
Other Cache: None  
Memory: 8GB  
Disk Subsystem: 6 36GB 15KRPM Ultra 320 SCSI Drives  
Disk Controllers: LSI Logic 1030 Ultra 320 SCSI LOM  
Other Hardware: 1 Extreme Networks Summit 7i GbE Switch

## Software

Operating System: Windows 2000 Advanced Server w/SP2  
File System: NTFS  
Other Software: Hot Fix Q298896, Intel driver v6.2.21

## HTTP Software

Vendor: Microsoft  
HTTP Software: IIS 5.0 and SWC 3.0  
API: ISAPI  
Server Cache: SWC 3.0  
Log Mode: W3SVC

## Test Sponsor

Test Date: Jul-2002  
Tested By: IBM  
SPEC License: 11

## Network

# of Controllers: 2  
Network Controllers: 1 Intel Pro/1000 XT; 1 Intel 82546EB Dual Port Gigabit LOM  
# of Nets: 3  
Type of Nets: Gigabit Ethernet  
Network Speed: 1 Gb/s  
MSL (sec): 30 (Non RFC1122)  
Time-Wait (sec): 60 (Non RFC1122)  
MTU: 1500

## Clients

# of Clients: 18  
Model: IBM eServer xSeries 330  
Processor: 933 MHz Pentium III  
# of Processors: 1  
Memory: 256MB  
Network Controller: IBM Netfinity Gigabit Ethernet Adapter  
Operating System: Microsoft Windows 2000 Professional w/SP2  
Compiler: Microsoft VC++ v6.0

## Notes/Tuning Information

### SUT Notes

OS and logs on 1 disk, separate logical drives, NTFS format  
5-disk RAID0 software stripe for file set, NTFS format

### Operating System Notes

Tuning Parameters:

- AFD/Parameters/TransmitWorker=32, adjusts system default thread, default 16
  - Control/FileSystem/NtfsDisableLastAccessUpdate=1, prevents updating LastAccess time stamp on NTFS directories
  - Control/Session Manager/Memory Management/LargeSystemCache=0, limits system cache size, default 1
  - Control/Session Manager/Memory Management/SystemPages=0xffffffff, sets number of system pages
  - Tcpiip/Parameters/DisableLargeSendOffload=0, enable large sends for TCP/IP
  - Tcpiip/Parameters/IPEnableRouter=0x1, enables IP routing on server, default 0
  - Tcpiip/Parameters/MaxFreeTwtcb=0x10c110, sets maximum number of TIME\_WAIT tcbs to 1,098,000
  - Tcpiip/Parameters/MaxHashTableSize=0x10000, sets TCB hash table size to 65,536 entries, default 512
  - Tcpiip/Parameters/MaxSendSegments=0x1000, max TCP segments sent consecutively to a destination, default 64
  - Tcpiip/Parameters/MaxUserPort=0xffff, sets maximum open ports to 65534
  - Tcpiip/Parameters/NumTcbTablePartions=0x20, sets number of independent TCB table segments, default 4
  - Tcpiip/Parameters/TcpTimedWaitDelay=0x3c, sets TIME\_WAIT parameter to 60 seconds (non-RFC 1122), default 240
  - Tcpiip/Parameters/TcpWindowSize=0xffff, sets TCP send/receive window size, default 8192
- 3 NIC IRQs bound to logical CPUs 1,2,3 (Hyper-Threading enabled)  
cgigate process affinitized to logical CPU0 via Task Manager, default last (logical) CPU  
Intel NIC settings:
- ChecksumRxTcp=1, offloads RX checksums to NIC, default 0
  - FlowControl=0, disables flow control, default 3
  - NumCoalesceBuffers=768, number of coalesce buffers for transmit acceleration, default 128
  - NumTxDescriptors=4096, number of descriptors to send packets, default 256
  - TcpSegmentation=1, enables TCP segmentation offload, default 0

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## Notes/Tuning Information (Continued)

### HTTP Software Notes

#### IIS Parameters:

- IIS set for more than 100,000 hits/day
- IIS Home Directory: Read/Write Permissions, Execute Permissions for Scripts & Executables, Low Application Protection
- IIS Virtual Directory spec99 points back to web server root
- IIS Logging: NCSA CLF format

#### SWC Parameters:

- SWC/Parameters/LargeBufferSize=0x1b58, large file cache size (MB), default system-dependent
- SWC/Parameters/LargeCachingThreshold=0x124f80, max file size (bytes) for cached files, default system-dependent
- SWC/Parameters/LogDrive=F, puts log file on F: drive
- SWC/Parameters/LogFileInitialSize=0xffffffff, sets initial log file size to 4 gigabytes
- SWC/Parameters/NumberOfFreeConnections=0xe10
- SWC/Parameters/SmallBufferSize=0x40, memory for caching small files (MB), default system-dependent
- SWC/Parameters/SmallCachingThreshold=0x32, max size for small files (bytes), default system-dependent
- SWC/Parameters/SwcLockedMemorySize=0x6c, size of locked memory for SWC ops (MB), default system-dependent
- SWC/Parameters/VirtualRootName=spec99, sets virtual directory name to spec99
- SWC/Parameters/VirtualRootPath=E:\spec99, sets physical path where files are located
- TWC CAD buffers=768, default not set
- CGI-Gateway buffers=48, default not set

### Client Notes

Tcpip/Parameters/MaxUserPort = 0xffff, sets maximum open port to 65534

### Other Notes

Tuning Disclosure: See above  
Dynamic API: Dell-20001212-TWC.zip